

CLAIMS

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1. A process for the production of a shaped article of a consumable product in which a composition in an extrudable form is extruded through a die comprising at least one orifice characterised in that the cross-sectional area for flow through the said at least one orifice is varied continuously during at least part of the time said extrusion is occurring, whereby an extrudate is
- 10 obtained whose cross-sectional area varies along at least a part of its length.
2. The process of claim 1, wherein the volumetric flow rate is varied by varying the pumping rate used to deliver the extrudate to the nozzle.
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3. The process of claim 1, wherein the volumetric flow rate is varied by varying the internal volume of a chamber through which the extrudate is delivered to the nozzle.
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4. The process of claim 1, in which the orifice is constructed at least in part from an elastically deformable material.
5. The process of claim 1, in which the orifice is constructed of at least two parts which define its cross-sectional area and at least one part can be moved
- 25 relative to the other so as to vary its cross-sectional area.
6. The process of claim 5, in which the orifice is of an iris diaphragm construction.
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7. A process of claim 5, in which the orifice is constructed of at least two adjacent cylinders, the cylinders having substantially parallel axes of rotation and being positioned so their circumferential surfaces are in contact, the axes of rotation being substantially normal to the direction of extrusion, the orifice

being defined by a contoured region of the circumferential surface of at least one of the cylinders, the cross sectional area defined by the said contoured region or regions varying with the rotation of the cylinders.

- 5 8. The process of claim 1, in which a primary volumetric flow rate is kept substantially constant during extrusion.
9. The process of claim 1, in which a secondary volumetric flow rate is varied during extrusion.
- 10 10. The process of claim 1, in which the die comprises more than one orifice whose cross-sectional area for flow is varied during extrusion.
- 15 11. The process of claim 8, in which the cross-sectional areas of the orifices are co-ordinated such that the sum of the cross-sectional areas remains substantially constant during extrusion.
- 20 12. The process of claim 1, in which the total cross-sectional area for flow through the orifice or orifices and the secondary volumetric flow rate are controlled with respect to each other.
13. The process of claim 1, in which the temperature of at least part of the die is controlled during the extrusion process.
- 25 14. The process of claim 1, in which the consumable product article is a detergent bar.
- 30 15. An extruding apparatus for forming shaped articles comprising an extruder die which includes at least one orifice, the cross-sectional area of which may be varied in use, means for applying pressure to a composition which is in an extrudable form to extrude the composition through the at least one orifice, and means for continuously varying the volumetric flow rate of the

composition fed to the orifice during at least part of the time said extrusion is occurring.

- 5 16. The apparatus of claim 15, wherein the means for continuously varying the volumetric flow rate comprises means for varying the pumping rate of the means for applying pressure.
- 10 17. The apparatus of claim 15, wherein the means for continuously applying pressure comprises means for varying the internal volume of a chamber through which the extrudate is delivered to the nozzle from the means for applying pressure.
18. The apparatus of claims 15, in which the means for applying pressure comprises a positive-displacement pump.
- 15 19. A shaped detergent bar obtainable by the process of claim 1.

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